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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/786,114	06/08/2001	Christian Goire	T3006-906838	5086

7590 03/15/2004

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EXAMINER

RAMPURIA, SATISH

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 03/15/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/786,114	GOIRE ET AL.	
	Examiner	Art Unit	
	Satish S. Rampuria	2124	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03/01/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>04/16/01,06/08/01</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the application filed on June 08, 2001.
2. This is in response to the preliminary amendment received on June 08, 2001.
3. Claims 1-5 has been cancelled.
4. Claims 6-16 added as new claims.
5. Claims 6-16 are pending.

Information Disclosure Statement

6. An initialed and dated copy of Applicant's IDS form 1449, Paper No. 02, is attached to the instant Office action. Paper No. 04 is the duplicate copy of Paper No. 02.

Drawing

7. Drawings corrections of Figs. 1-3 filed on June 08, 2001 have been accepted.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Ritchey**, hereinafter called Ritchey the programming language JAVA, published in September 22, 1995,

in view of **Chan** et al., hereinafter called Chan, US Patent No. 6,005,942 and further in view of **Necula** et al., hereinafter called Necula, US Patent No. 6,128,774.

As per claim 6, Ritchey discloses:

- *A method for verifying transformation of a source code* (page, 332, "Bytecode Verifier... code passes through a bytecode verifier"), *said source and transformed codes being associated with virtual machines* (page 331, "The Running of Code... code compile for the Java Virtual Machine")
- *determining, for each of said source and transformed codes, a common subset, constituting a single virtual machine that factors in the behavior of said source and transformed codes* (page 331, "The loading of code... done... Class loader... interpreter... Java files... is referenced... also any inherited or referenced classes that the code will need" and page 332, "Class Loader... classes... inherited from... classes")
- *verifying a given corresponding property between said auxiliary functions of all of said pairs* (page 332, "Bytecode Verifier... checks line for consistency with the Java specification and program (consist of functions) itself")
- *verifying that said transformation of the source code into a transformed code satisfies said given correspondence property* (page 332, "Bytecode Verifier... checks line for consistency with the Java specification and program (consist of functions) itself"). Ritchey teaches the basics of JAVA Technology. The enabling technology of applicant's invention.

Ritchey did not explicitly disclose transformed code designed for the embedded system of JAVACARD™.

However, Chan disclose in an analogous system download an application onto the smart card (col. 6, lines 57-60 “FIG. 3B also allows for a secure and managed post issuance download of an application onto a smart card”). Where rendering program is processed on JAVA virtual machine (col. 1, lines 61-62).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method to download an application onto the smart card as taught by Chan in corresponding to the method of transformation of code as taught by Ritchey. The modification would be obvious because of one of ordinary skill in the art would be motivated to download an application which has been transformed via a transfer mechanism as suggested by Chan (col. 3, lines 1-7).

Neither Ritchey nor Chan disclose that data is described by the pairs of functions.

However, Necula discloses in an analogous system data is described by the pairs of functions (col. 7, lines 25-28 “The configuration data... describes... precondition-postcondition pairs, all of the functions... untrusted code... permitted to invoke”).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of secure execution of code using pair of functions for pre and post conditions as taught by Necula into the combination system taught by Ritchey and Chan. The modification would be obvious because of one of ordinary skill in the art would be motivated to have pair of source and transformed data for secure execution as suggested by Necula (col.2, lines 8-21).

10. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ritchey, Chan, Necula**, in view of **Bristol**, hereinafter called Bristol, US Patent No. 4,736,320.

As per claims 7 and 8, the rejection of claim 6 is incorporated and further neither Ritchey nor Chan nor Necula discloses logically relationship between functions.

However, Bristol discloses in an analogous system using logically relationship between functions (col. "organizes the control system into logically distinct application subsystems... provides distinct representations for logically different control... command statements... define precise application function roles... and in the relationship between the functional... control program; and... it uses logical and/or standard application functions")

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of including logically relationship between functions as taught by Bristol into the method of combination system of transferring code to smart card as taught by Ritchey, Chan, and Necula. The modification would be obvious because of one of ordinary skill in the art would be motivated to include logic with an identity relationship between functions to implement the desired control functions as suggested by Bristol (col. 4, lines 35-44).

11. Claims 9, 10, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ritchey, Necula, Bristol**, in view of **Chan** and in view of **Drupsteen** et al., hereinafter called **Drupsteen**, US Patent No. 5,856,659.

As per claims 9 and 10, the rejection of claims 6 and 7 is incorporated respectively, and further neither Ritchey nor Chan nor Necula nor Bristol discloses transforming code into memory chip of a card.

However, Drupsteen discloses in an analogous system transforming code into memory chip of a card. (col. 2, lines 59-61 “A card command... stored in memory... executed upon transfer to the card memory of a card”).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the method of transforming the code into the card as taught by Drupsteen into the combination system as taught by Ritchey, Chan, Necula, and Bristol. The modification would be obvious because of one of ordinary skill in the art would be motivated to download/modified the code into the memory of a card to perform the specific functions as instructed in the downloaded/modified code as suggested by Drupsteen (col. 1, lines 5-15).

As per claims 11 and 12, the rejection of claims 9 and 10 is incorporated respectively, and further neither Ritchey nor Necula nor Bristol nor Drupsteen disclose transformed code is a program written in the virtual machine language, and chip card stores a plurality applications.

However, Chan disclose in an analogous system use of virtual machine via JAVA card and storing multiple application on the smart card (col. 8, lines 35-37 “virtual machine is the

JAVA Card 2.0 API which provides a high level framework for writing applets for JAVA Card based platforms” and col. 4, lines 45-49 “Applications... run on the smart card via instructions... applications can include any application... run on a smart card, such as stored value, credit, debit, transit, and loyalty”). It is interpreted in order to use JAVA card program must be written in virtual machine language e.g. JAVA.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the code written in virtual machine and card to store multiple applications as taught by Chan in corresponding to transfer the data to the card and optimize the code in the combination system as taught by Ritchey, Necula, Bristol, and Drupsteen. The modification would be obvious because of one of ordinary skill in the art would be motivated to transfer the code in the language of virtual machine to the card and to store multiple application to run different types of data on the card as suggested by Chan (col. 1, lines 51-54).

12. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ritchey, Chan, Necula, Bristol, Drupsteen**, and in view of **Wilkinson** et al., hereinafter called Wilkinson, US Patent No. 6,308,317.

As per claims 13-16 the rejection of claims 9, 10, 11, and 12 is incorporated respectively, and further neither Ritchey nor Chan nor Necula nor Bristol nor Drupsteen disclose source code is program written in a “JAVA” virtual machine and said transformed code is program written in a “JAVA CARD” virtual machine.

However, Wilkinson discloses in an analogous system with source code written in JAVA virtual machine and transformed code for JAVACARD™ (col. 8, lines 25-34, “These source code... prepared... compiled in a Java... development environment... class files... are produced... corresponding to their respective class Java source code... class files... follow the standard class file format... of the Java virtual machine” and col. 8, lines 41-43 “the card class file converter... postprocessor... processes... class files... encoded in the standard Java class file format... using a string... produce a Java card class file 27 in a card class file format”).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the source and transformed code written or download in JAVA virtual machine and JAVA CARD respectively, as taught by Wilkinson in corresponding to the combination system taught by Ritchey, Chan, Necula, Bristol, and Drupsteen. The modification would be obvious because of one of ordinary skill in the art would be motivated to provide source code to JAVA virtual machine to produce code for JAVA CARD™ as suggested by Wilkinson (col. 1, lines 16-19).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patent is cited to further show the state of the art with respect to transform or download code in smart card or integrated circuit.

US Patent No. 6,546,549 to Li

US Patent No. 5,923,884 to Peyret et al.

US Patent No. 5,161,231 to Iijima

US Patent No. 6,591,229 to Pattinson et al.

US Patent No. 5,715,431 to Everett et al.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Satish Rampuria whose telephone number is 703-305-8891.

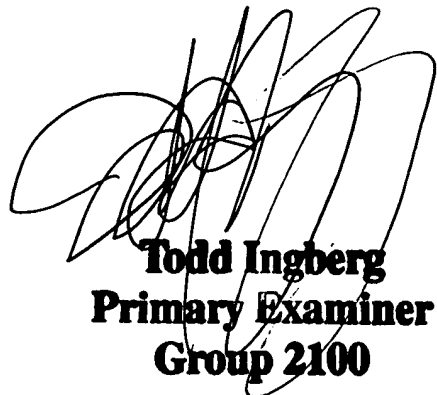
The examiner can normally be reached on Monday-Friday from 8:30 A. M. to 5:00 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor Kakali Chaki can be reached at 703-305-9662. The fax number for this group is 703-872-9306. An inquiry of general nature or relating to the status of this application or proceeding should be directed to the group receptionist whose telephone number is 703-305-3900.

Satish S. Rampuria

Patent Examiner

Art Unit 2124

03/08/04



Todd Ingberg
Primary Examiner
Group 2100